

**Patent Claims:**

1. A process for the adhesive connection of sheets in the book-binding field by perforating the sheets along a folded edge, folding the perforated sheets, applying adhesive onto the folded edge, and assembling the sheets into a book block, characterized in that the perforating process is performed along the folding edge so that two interrupted perforation lines extending parallel to and in a small distance from each other and staggered longitudinally from each other are punched in the shape of a double slit line forming a widened folding edge, the punched spots of the two perforation lines are staggered in view of each other by the length of one perforating tooth in longitudinal direction relative to each other along the folding edge, the sheets of the stack of sheets folded between the perforation lines are provided with an adhesive apply on surfaces associated to each other and produced by double perforations between recesses of the one perforation line and recesses of the other perforation line, and the double sheets processed in this manner with the recesses of the subsequent ones are pressed into a book block.
2. A process as claimed in claim 1, wherein the folded edge is produced by perforating cuts in the longitudinal direction, which perforation cuts extend in a meander type or wave type shape, the folded edge is formed by two perforation lines extending in a small distance from and parallel to each other, the perforation of the folded edge is cut in the longitudinal direction by the knife teeth, and the connection lines between the end of one tooth cut of the first perforation line and the beginning of an associated second tooth cut of the second perforation line represent the connection between the cutting lines in the

longitudinal axis so that discontinuous separation lines are punched.

3. A process as claimed in claim 1 or 2, wherein processing of the folding or sheet edges is performed according to a cutting geometry, which is symmetrical in the longitudinal axis and which is carried out by means of linear or circular punching tools.
4. A process as claimed in any one of claim 1 - 3, wherein the punching lines of a punching tool are formed extending in a meander-type line.
5. A process as claimed in any one of claims 1 – 3, wherein the punching lines of each punching tool are formed extending in a dovetail- type line.
6. A pocess as claimed in any one of claims 1 – 5, wherein the punching tools are formed so that the halves of the sheets subsequent to the punching step are still connected with each other by transversal webs, and that the two punched halves of the sheets subsequent to the slitting or punching step are folded together.
7. A process as claimed in any one of claims 1 – 5, wherein the transversal webs are provided with a central interruption.
8. A process as claimed in claim 1, wherein pockets are punched or cut into the stack of sheets, which are to be combined into a book block, the punched sheets are staggered by one tooth pitch in an alternating manner, and the sheets are put together.
9. A process as claimed in claim 8, wherein the sheets put together in a book block are cut or punched equally, and subsequent thereto each

second sheet is staggered in view of the first sheet by one half of a pitch.

10. A process as claimed in one of claims 1 and 6, in which along the widened folding edge at the transient positions of recesses of the one sheet to recesses of the adjacent sheet a virtual hinge line is formed.
11. A process as claimed in any one of claims 1 – 7, in which the distance of the two perforation lines of the widened folding edge is altered dependent on the thickness of paper and is adapted thereto.
12. A process as claimed in any one of claims 1 – 11, in which the virtual hinge line is formed by hinge means in the centre of the transversal lines, which connect the two meander-type lines extending in the longitudinal direction with each other.
13. A device for performing a process according to one of claims 1 – 12, comprising means for perforating and folding the sheets to be combined into a book block at the folding edge, and for applying adhesive material at the edges thereof, characterized in that two perforating knives or alternatively the two halves of a double perforating knife are variably connected back to back in a distance of one or several paper thicknesses with each other, the cutting edges are arranged in the direction of two parallel perforation lines, the two perforation knives or the two halves of a double perforation knife are staggered parallel to each other by one perforation tooth, and the perforation areas or the recesses produced when folding the sheets between the two perforation lines and corresponding with the individual perforation teeth form the adhesive applying areas.

14. A device as claimed in claim 13, wherein the perforation tool is a one-part knife in the form of a double slot perforation knife the cutting edge of which has a meander- or wave-like path, the meander sections of the cutting edge extend in the longitudinal direction of the perforation line result in recesses, which at the perforation line open alternately to the one and to the other side, form the adhesive areas, and the transversal webs, which restrict the two adjacent recesses in transversal direction, are formed by continuous or alternately interrupted cutting edges.
15. A device as claimed in claim 13, wherein the cutting edges of the perforation knife or alternatively the two halves of a double perforation knife extend in a meander-type path, whereby the cutting edges penetrating the sheet material result in meander-type separation lines, the longitudinally extending perforations partly cut through the material and generate an interrupted cutting line each, and the transversely extending perforations do not or not entirely cut through the material and at least leave a transversal spot in the form of a connection, whereby the hinges resulting therefrom in their entirety form the virtual hinge line as a hinge axis.
16. A device as claimed in claim 13, wherein the recesses at both sides of the longitudinal axis along the meander-type perforation line are arranged in a continuous sequence, the recesses at the two perforation lines are staggered in the longitudinal direction by the length of a knife tooth, and the recesses of the two parallel perforation lines in combination form a continuous, strip-like area across the entire length of the perforation with the width of the transversal webs.

17. A device as claimed in any one of claims 13 – 15, wherein the two cutting knives or alternatively the two halves of a double perforation knife connected back to back are adjustable in a transverse direction relative to each other in order to alter the width of the folding line.
18. A device according to any one of claims 13 – 15, wherein two perforated sheets folded about the folding line comprise a continuous bonding area in longitudinal direction with the width of the transversal connecting line between the two perforation lines.